

# FOUR POST PARKING LIFT

## CL-PK402



INSTRUCTION & MAINTENANCE MANUAL

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**Packaging, transportation and storage**



**All packaging, assembly and disassembly, transportation and dismantling must be operated by professional personnel.**

**Packaging dimension** (As shown in figure 1)

**Standard configuration and list:**

1. Main post	one piece	2. Assistant post	3 pieces
3. Main, diagonal post roof	2 pieces	4. Assistant, diagonal post roof	2 pieces
5. Safety rack	4 sets	6. Main girder	1 piece
7. Assistant girder	1 piece	8. Front and back baffler	4 pieces
9. Front and back stop baffler	4 pieces	10. Blocking tire trestle	2 pieces
11. Tool shelf (Optional)	1 piece	12. Oil receiving plate (Optional)	4 pieces
13. Approach bridge	2 pieces	14. Movable rack	4 sets
15. Pumping station	1 piece	16. Insurance mechanism	1 set
17. Part bag	1 bag		

**Packaging dimension figure:**

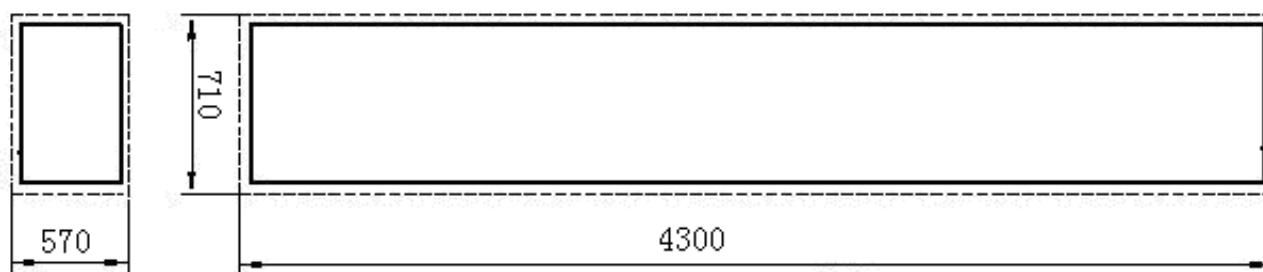


Figure 1

**Packaging, Transportation and Storage**

**Transportation** (Figure 2)



**Goods shall be handled and moved by crane and fork lift truck weighing over 1.5 ton. To prevent goods from falling down, during the lifting operation, one person shall be in charge of observing the goods intently, so as to avoid accidents.**

- The goods shall be transported by vehicles or liners.
- When the goods arrive at the destination, it is necessary to check whether the goods are complete to prevent damage and loss during the transportation.

- If there is any damage in the package, inspection to the damaged box shall be conducted by the *Encasement List* to confirm the situation about the damage and loss of goods. Meanwhile, it is necessary to notify the person that undertakes the transportation immediately.



**The machine is heavy goods! Manual loading, unloading and handling shall be beyond the consideration, safety during the operation is of great importance.**

In addition, the lifting of goods during loading and unloading shall be operated according to the figure. (Figure 2)

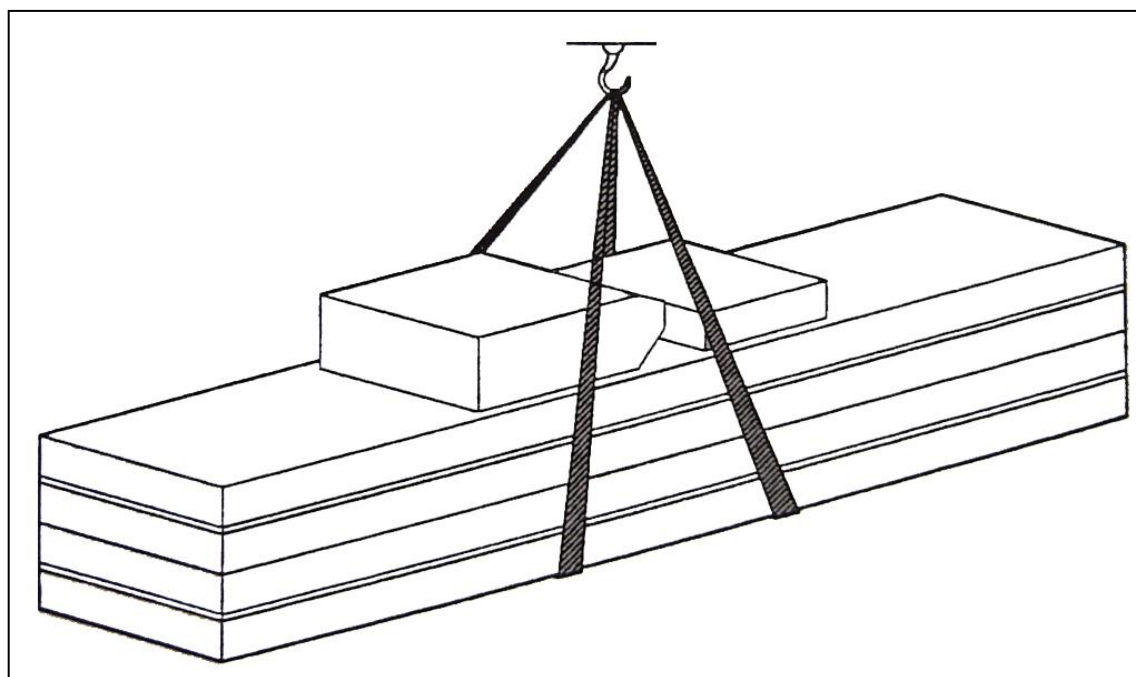


Figure 2

**Storage:**

The machinery and equipment shall be placed in indoor warehouse and outdoor storage shall make good water-proof treatment.

Van truck shall be adopted during the transportation and goods shall be stored in containers if they are shipped by liners.

The control panel shall be kept upright during the transportation; in addition, extrusion of goods shall be avoided.

Environmental temperature for storage of machine:  $-25^{\circ}\text{C} \sim 55^{\circ}\text{C}$ .

### **Important notes**

1. Inspect whether lift is damaged and keep records in delivery order.
2. If some damage is appearing in the process of transportation, the operators must be notified and reported for compensation.
3. When unload lifts and assemble them, make sure that lifts and other equipment have enough space
4. before operating lifts, please read the safety procedure and operation instructions. Always put the manual near lifts and make all operators have read the manual.
5. Attentions: use must be on flat ground,  
(If slope is over 1/8inch per feet, lifts must be fixed in proper position.)
6. All bolts, screw nuts and oil circuit shall be inspected after assembly is finished, and then lift can be used
7. Lifts must be placed in safety position before another vehicle is under the lift and no one is allowed to enter when lift is rising.

### **Machine description**

1. The design of four-post carport lift suits for parking of various places such as enterprise and public institution, office building, family, villa, residential property management, hotel and other places, which can be designed according to different areas and assembled in different angles. The lifts can not be moved for another purpose, especially not suit for washing and spaying working, in addition, lifted load can not be more than lifting capacity.
2. The machine takes one room and has two parking places, saving precious spaces, which has multiple-purpose such as commercial and family use.
3. The machine has double safeties, machinery and breaking rope, which is a safer parking place for your car.
4. The machine takes hydraulic driving with low noise and reliable operation.
5. The machine lifts with short time, taking car rapidly with 60 seconds in general.
6. The machine takes advanced spraying process, beautiful color, so that the color of machine is beautiful, green environmental protection without lead; the machine with strong anti-corrosion capability is durable.
7. Assembly is easy without corporation with civil engineering
8. The parking equipment is not needed to fix and can be moved back and forth, (Attention: car moving is not allowed and the ground must be flat when there is no need to be fixed)



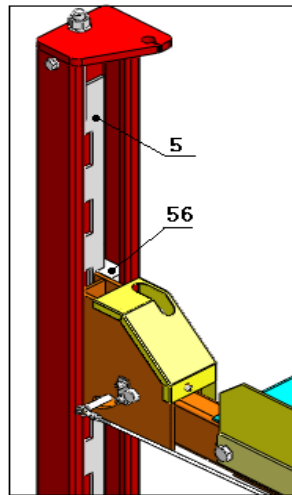
**Manufacturers reserve the rights that making proper and small modification for technical improvement**



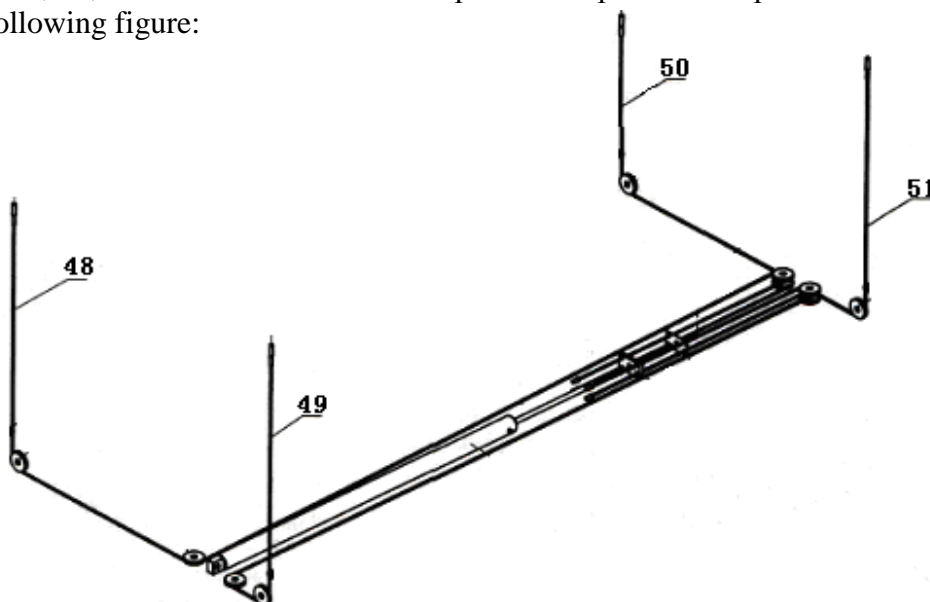
## Chapter II Assembly procedure

**Notes: The following serial number are explained according to explosion diagram**

1. Open packaging; inspect machine parts according to *According To Standard Configuration and List*.
2. Place part 1 and 2 in proper place according to *Lift Dimension*, and put them down on the ground.
3. Disassemble the part 58 and 69 from part 6.
4. Assemble part 6 in part 1 and 2,
5. Plug part 5 in the slot of part 56. As shown in following figure:



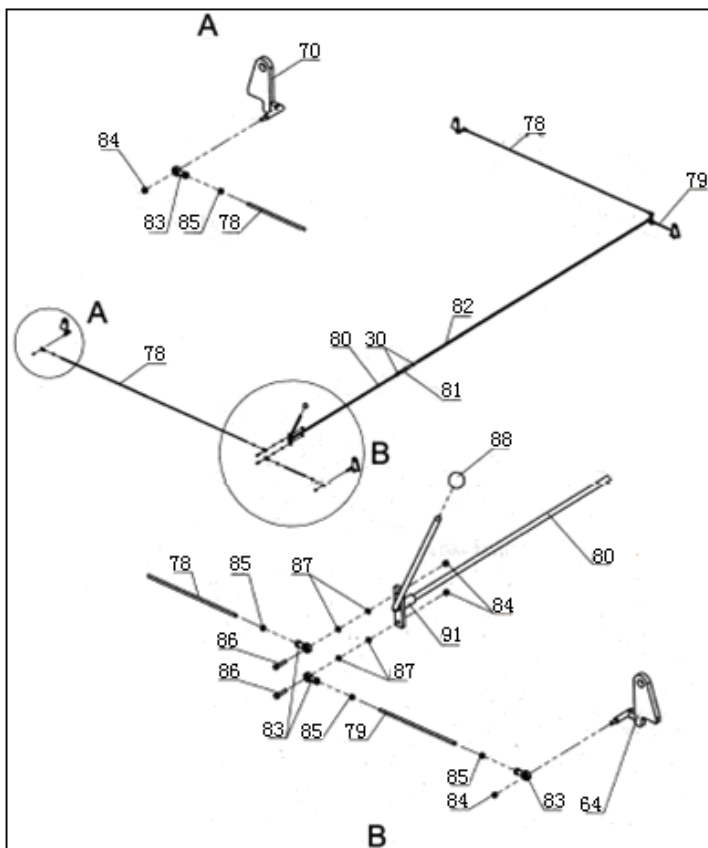
6. Assemble part 3 and 4 in part 1 and 2, and fix them with M12x30 hex head screw, nut, spring washers, flat washer and make them stand on end; lock part 6 in the first class safety lock of part 5, place them according to *Lift Dimension*.
7. Put part 33 and 34 on the part 6, (Notes: part 33 leans against part 1 and pay attention to oil cylinder direction)
8. Pull part 48, 49, 50 and 51 with four men's power and pull out the piston rod of oil cylinder. As shown in following figure:



9. Fix part 6, 15, 33 and 34 with M18x100 bolts, spring washer and flat washer.

10. Thread steel wire rope 48, 49, 50 and 51 through part 3 and 4, and then fix them with screw nuts in steel wire rope

11. Assemble safety mechanism. As shown in following figure:



12. Assemble power unit, fix power unit on part 1 with M8x25 socket head cap screw, spring washer, flat washer and screw nuts.

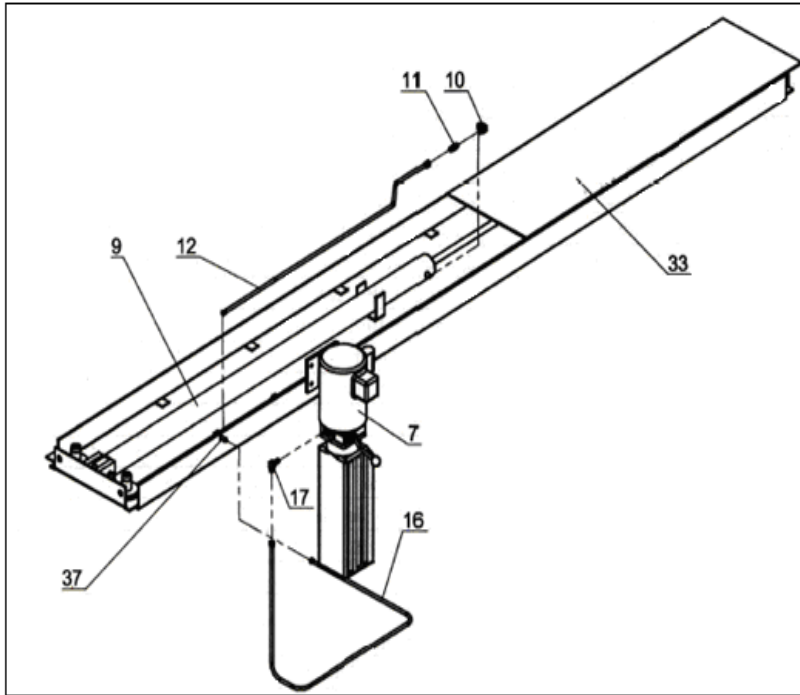
13. Unscrew pouring orifice of power unit, and pour 20L 20#anti-wear hydraulic oil into oil cylinder.

Connecting oil tube and oil circuit as shown in following figure; **pipeline connecting:** *Oil Circuit Connecting Figure* oil circuit connecting



**No damage to oil tube and pay much attention to protect tube joint in the process of connecting oil tubes, avoiding foreign bodies entering into oil tubes and damaging hydraulic system.**



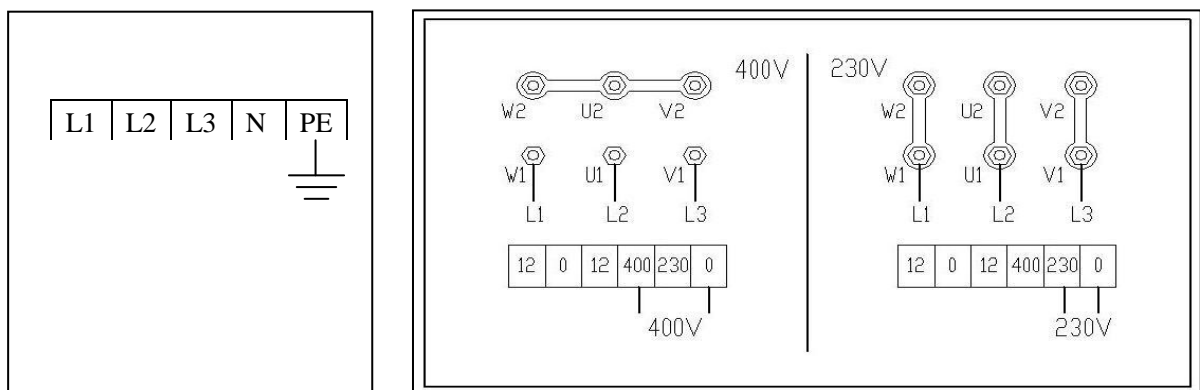


#### 14. Electric loop connecting:



Connecting electric loop according to the wire diameter and wire number of *Electric Connecting Figure*

**Only professional personnel with electric operation qualification can be engaged in electric assembly workings**



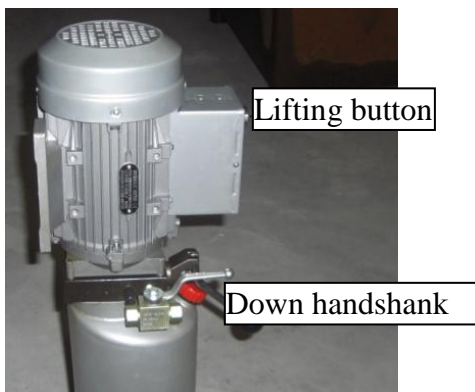
##### i. When control cabinet is not assembled:

Directly connect the 400V three-phase four-wire system power wire ( $3 \times 2.5\text{mm}^2 + 2 \times 1.5\text{mm}^2$  cable) and junction box

##### ii. When control cabinet is assembled: (Optional item)

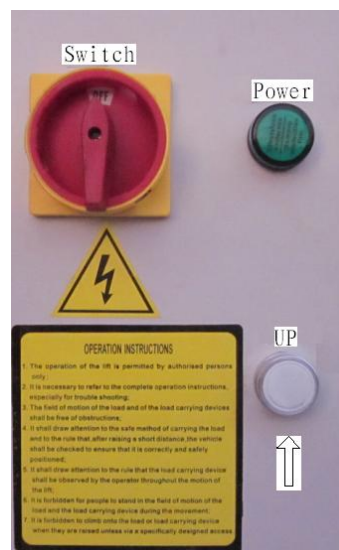
- Open control cabinet firstly

- Power wire connection: connect the 400V three-phase four-wire system power wire ( $3 \times 2.5\text{mm}^2 + 2 \times 1.5\text{mm}^2$  cable ) to control cabinet L1, L2, L3 , N and input terminal, and connect PE ground wire to ground indication bolt
- Dynamo wire connecting; connect cable U12#、V12#、W12# control box to dynamo junction box
- If 230 V three-phase supply, the control transformer and dynamo connection need to be adjusted (The connection is connecting method with control cabinet)



**Pump station without control cabinet and lift unlocking method**

**The following are optional dynamo and control cabinet:**



**Pump station with control cabinet (Customer optional)**

**Control cabinet console (Customer optional)**

1. Fix part 58 and 69 on parts.
2. Assemble part 8 and 35 in machine; finally fix well all the bolts and screw of the machine.
3. Assemble rest moving parts on the machine.

**The above part is the lift assembly process**

## **Chapter III: Commissioning**

### **i. No load commissioning:**

1. Switch on power supply, press lifting button, inspect whether the lift is rising, if not, reverse three-phase (380V power unit)
2. Lift is rising to 1,000mm and then lock it, inspect whether the lift safety falls into safety hole in the same class, if not, the safety rack must be adjusted to make safety falling into safety hole.
3. Measure whether the four points' height of lift are the same, if not, the steel wire rope and safety rack need to be adjusted, making the four points' error not exceed 5mm
4. After steel wire rope and safety rack are adjusted, press lifting button to make lift rise to the highest place, at this moment inspect whether lift is shaking, if shaking is appearing, post and safety rack must be poured lithium base grease, making it rising smoothly.
5. Press unloading handshank of power unit and machine descending handshank, make lift descend lowest.
6. Repeat 2-5 procedures for 2-3 times, and then the commissioning of lift no-load is finished.

### **ii. Loading testing:**

- Drive vehicle that not heavier than the maximum lifting capacity to platform, pull handbrake firmly, making vehicle in the braking state and personnel leave vehicle and platform
- Fix front and back bafflers in machine.
- Put blocking tire trestle in the tire place to avoid vehicle gliding for not braked well.
- Press “ascending “button, rise main engine platform and observe whether the platform is stable
- Inspect whether there is unusual sound in lift rack and hydraulic pump station
- Press “descending handshank”, observe whether main safety mechanism is accurate and reliable

## **Chapter VI Operation**



**Only the trained machine operator can operate the lift. Inspect the following attentions before operation.**

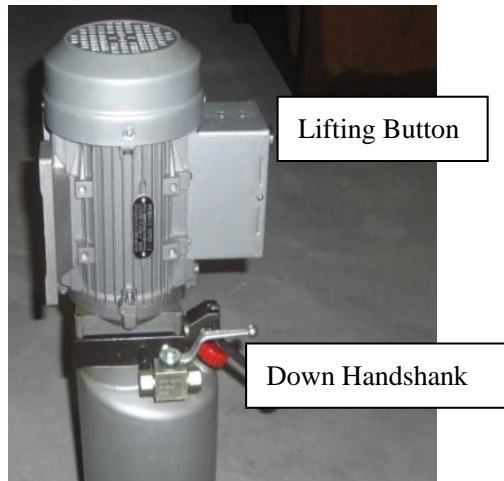
### **Operation attentions:**

- Before work, troubleshoot the barrier around and under the machine
- When ascending and descending, people shall not be allowed to enter lift ruled area, places below or above the machine or vehicles on the platform
- Not allowed to lift vehicle and goods that exceed the range of lifting capacity
- observe whether lift platform is synchronous, if the unusual is appearing, stop machine immediately, inspect and troubleshoot stoppage, and then put into use
- When platform is descending, firstly rise platform a little and press operation handshank to observe whether four safety detents and safety strip are off completely, or platform can

not descending

-If machine is not used longtime, platform shall descends to lowest position, driving away vehicle and shutting down power

**Electric operation instructions: (see operation panel figure)**



Standard configuration (Pump station without control cabinet)



Control cabinet optional

**Main engine ascending:**

- Press “Up” button, oil pump running, platform lifting
- Release “Up” button, oil pump stopping running, platform stopping lifting immediately

**Main engine descending:**

- Press “Descending handshank” and press safety operation handshank, platform descending; Release handshank, platform stopping descending.
- When safety is in safety strip, lift the platform a little (to let the safety detent away from tooth) and then press “Descending handshank”
- Press “Descending handshank” alone, platform descending; When safety strip fall into the next safety strip hole position, descending stopping and platform locked.

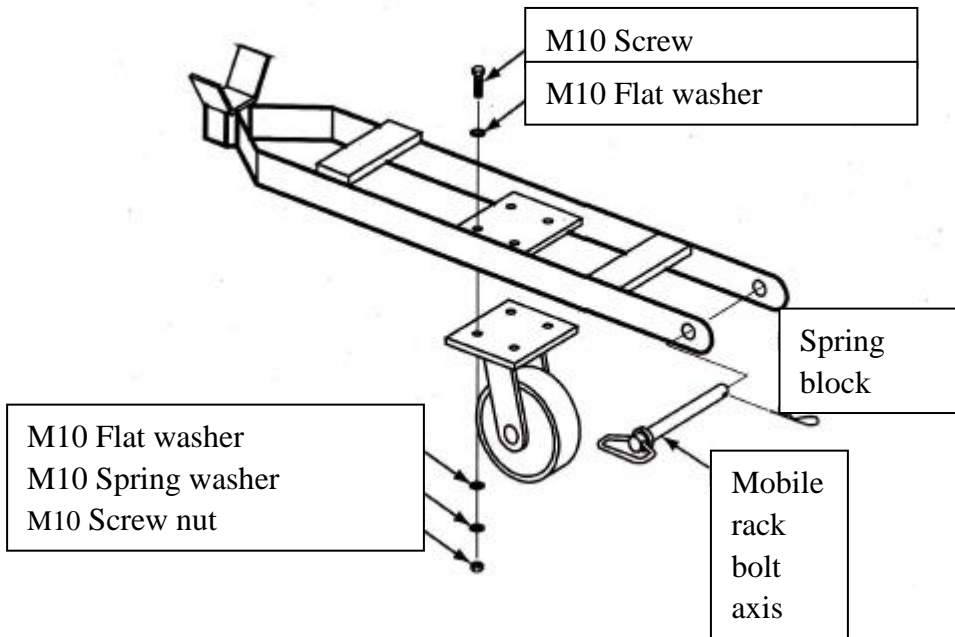
**Use and assembly of mobile rack**

**Chapter V: Use of optional parts**

1. Assemble Mobile Rack as the following diagram:

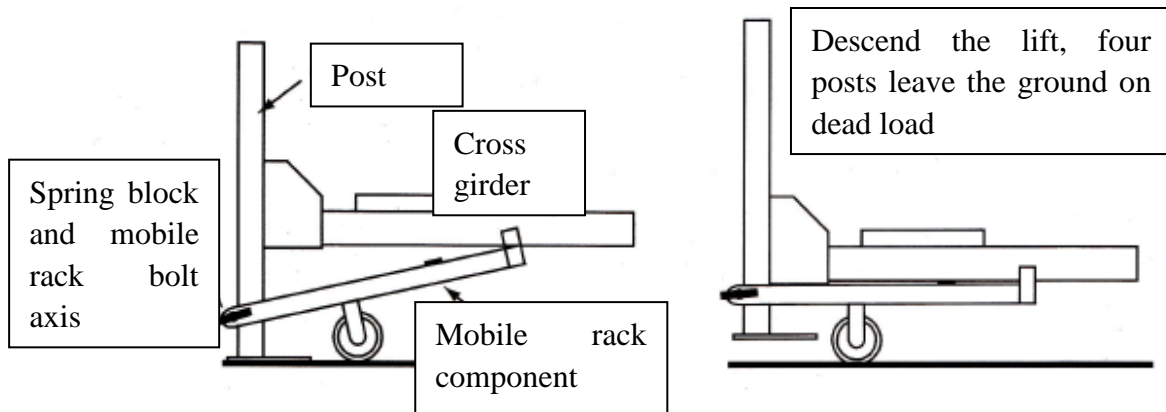
**Notes:** In the following procedures, spring block and mobile rack bolt axis shall be used to fix mobile rack to the lift.

Lift with such configuration shall not have to be fixed to the ground; however the ground shall have to be flat.



2. Instructions of mobile rack:

- Lift the lift at the height of 500-800mm
- Put the mobile rack components under the cross girder as the following diagram: Fix it with post by spring block and mobile rack bolt axis
- Descend the lift, the post shall leave the ground surface automatically.

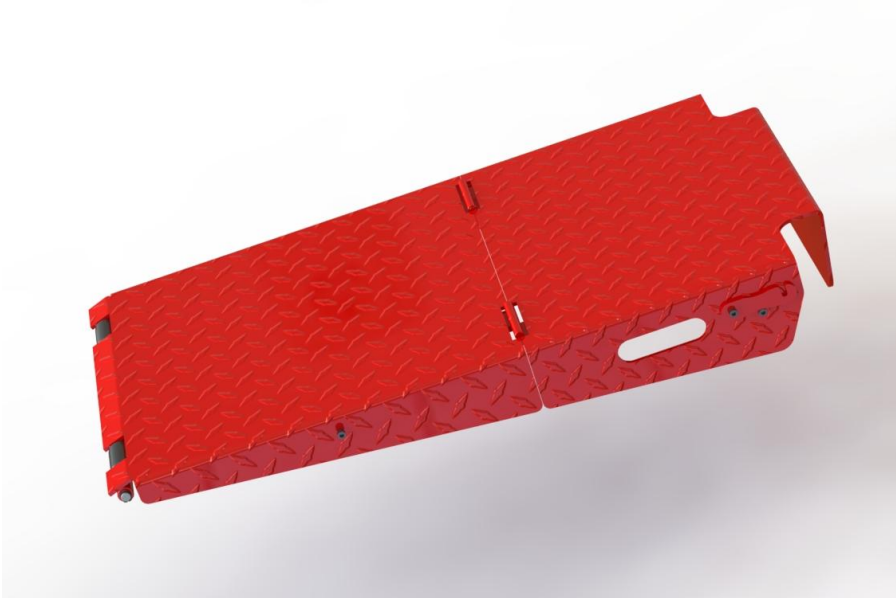


**Subgrade requirement**

Subgrade requirement: Concrete based ground with 3,000PSI, > 300mm in thickness

Note: Pitch and similar insecure ground surface shall not be used.

**2. The plate on the folding, folding show figure,**



**Special notes**

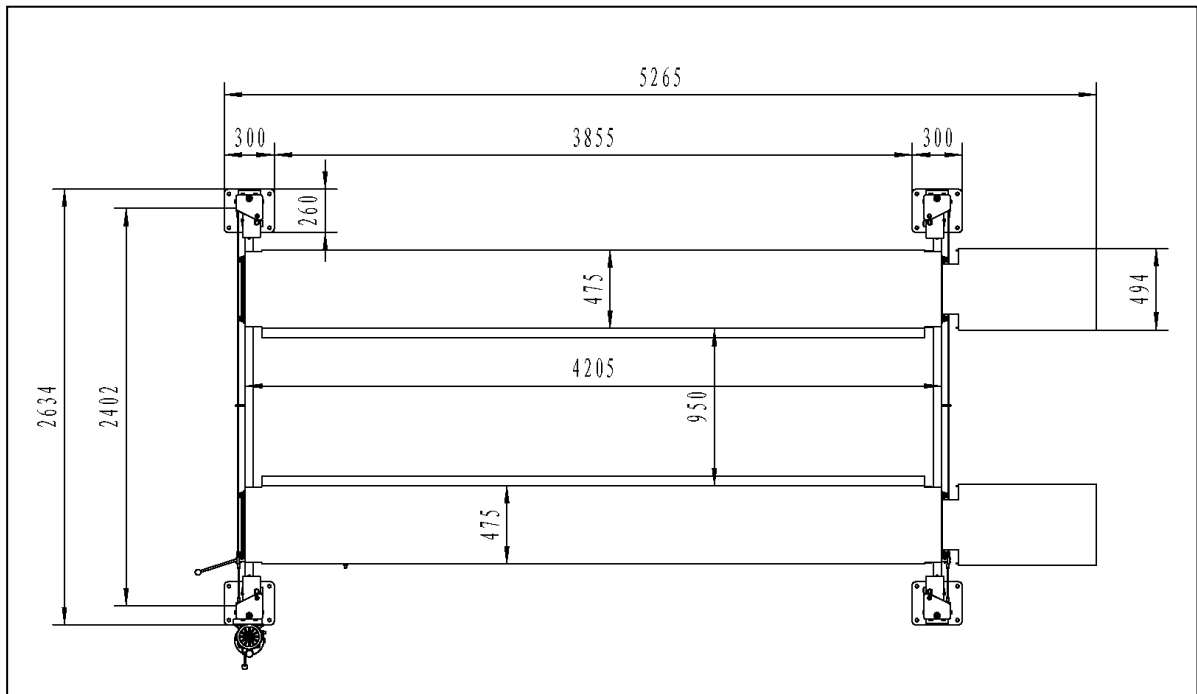
- ▲. The lift with mobile rack shall not have to be fixed to the ground by bolt; however, the ground shall have to be flat.
- ▲. If you need to fix the lift to the ground, please see the following assembly requirement and standard for reference:

**Subgrade and fixing requirement**

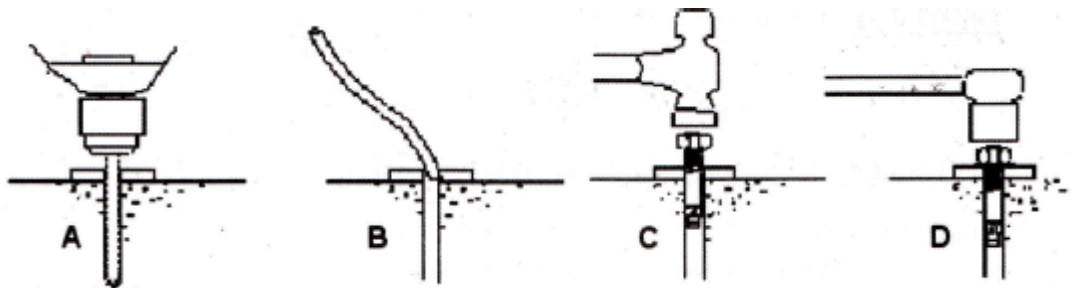
I Subgrade requirement: Concrete based ground with 3,000PSI, thickness > 300mm

II You shall operate the following before fixing the machine

- ▲ . Put the gasket under the post to ensure the post is vertical and ensure the posts are at the same height by using gasket according to demand meanwhile.
- ▲ Assemble the lift in the position as the following drawing of site



III. Fix the lift by fixing bolt as the following diagram



1. Drill a whole with diameter 18mm and depth 140mm in the concrete ground using electric drill with carbide drill. Do not use excessively worn drill or drill that is not regular.
2. Keep the drill vertical to the ground when drilling.
3. You shall not have to exert strength and shall lift the drill to get rid of the redundant concrete from time to time.
4. Blow the flying dust in the hole clean in order to strengthen the soundness of the fixing bolt.
5. Cover the fixing screw with a flat washer, gasket and screw nut, put the bolt into the hole setting aside about 25mm thread and beat the screw nut of the fixing bolt gently until the flat washer is close to the floor and screw down the screw nut 1-2 circles.
6. Put the beating core of fixing bolt into the hole of fixing bolt after measuring the lift assembling position, the vertical post and height of safety, beat the fixing screw beating core and screw down the screw nut.

## **Chapter VI Inspection and maintenance**

- ▲.The provided regular preventative maintenance plan is the minimum requirement and lowest interval.
- ▲. Regular maintenance shall be provided by the interval of day, week and year in the following paragraphs.
- ▲.If you need to replace parts, you shall have to purchase lift parts from local lift dealer and shall not use other parts without company written instruction.

### **Warnings!**

- ▲.According the demand of occupational safety and health programs, you shall inspect lifting equipment before lift operation.
- ▲.Costly property loss, serious bodily injury or even death may happen without daily operation inspection. Therefore, you shall inspect safety lock system before the use of lift to guarantee correct operation.
- ▲.There may be death, serious bodily injury or equipment damage if you do not pay attention to the warnings. If you hear noise caused by abnormal operation or there is any suggestion of stopping the operation of lift, you shall stop to inspect immediately or replace parts.

If you need to replace parts, you shall purchase lift parts from local lift dealer and shall not use similar parts otherwise the company shall not be responsible for any unsafe factor.



**Daily inspection before operation (8 hours)**

- Inspect the safety lock in vision and audition
- Inspect the safety lock system to see its free motion and whether it meshes with rack.
- Inspect hydraulic connecting devices and oil circuit to see whether there is any leak.
- Inspect worn wire rope at lifting and descending positions
- Inspect fixing of all rope sheave and pulley
- Inspect the bolt, screw nut and screw to see if they are loose.
- Inspect connection and switch to see if there is any damage.
- Inspect the lubrication of wire rope pulley and axis.

**Weekly maintenance (Every 40 hours)**

- If lift is fixed on the ground:
  - Inspect fixing bolt to see whether it is loose. If there is, screw it down.
- Inspect post slider to see if there is pull.
- Inspect the hydraulic oil surface.
- Inspect and screw down bolt, screw nut.
- Inspect all the wire rope, wire rope pulley and oil tube to see if there is any harm or damage.

**Annual maintenance**

- The lift shall be lubricated by lithium base grease with wire rope and wire rope pulley at least once a year.
- Inspect whether there is excessive wear of wire rope. If there is, replace wire rope.
- Replace hydraulic oil to help the long run of hydraulic system.

**Special maintenance task**

Note: the following item shall be maintained by an trained serviceman:

- Replacement of hydraulic oil tube.
- Replacement of wire rope and pulley>
- Replacement of hydrocylinder by demand.
- Replacement of hydraulic power unit component
- Inspect deformation and damage of hydrocylinder piston rod and its top (thread)

## Chapter VII. Stoppage and troubleshooting



Machine stoppage shall be operated by trained and experienced technical operator

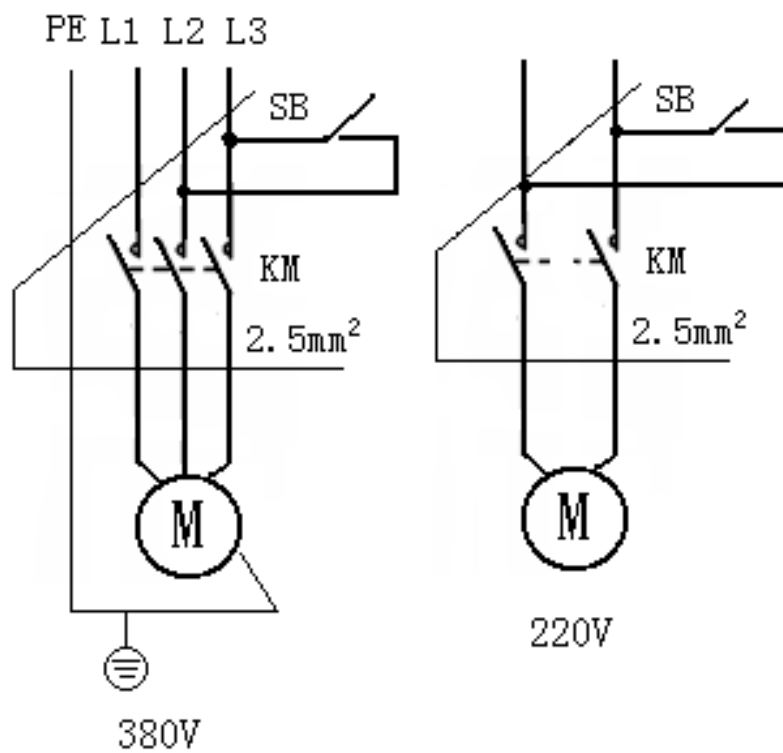
### Stoppage phenomenon and troubleshooting method

Stoppage phenomenon	Cause and phenomenon	Stoppage troubleshooting method
The dynamo does not work when you press "UP"	① Power supply or zero line abnormality	Inspect to troubleshoot and connect the wire
	② Pump dynamo major loop AC contactor no actuation	If dynamo works when forced by insulation rod, inspect control loop; If the voltage of both ends of contactor coil is normal, replace contactor
	③ Limit switch loop stoppage	If stoppage disappears when wire short circuit of limit switch terminal, inspect limit switch, wire and adjust or replace limit switch
	④ Button switch out of work	Inspect button contact, wire and troubleshoot.
The dynamo works but the lift does not work when you press "UP"	① Dynamo reversal	Exchange power supply coil phase sequence
	② The light load can be lifted while the heavy load can not.	Slightly turn the relief valve to the right to improve the safety pressure configuration; Descending valve spool dirt, clean the spool
	③ Hydraulic insufficient	Replenish hydraulic oil
The lift does not descend when you press "DOWN"	① The safety detent does not come away safety	Lift the platform a little, then descend it
	③ Safety lock by misoperation	Smash the safety strip out of safety detent and remember not to damage the components
Oil leak	① Pipe connect loose	Screw down the pipe connect

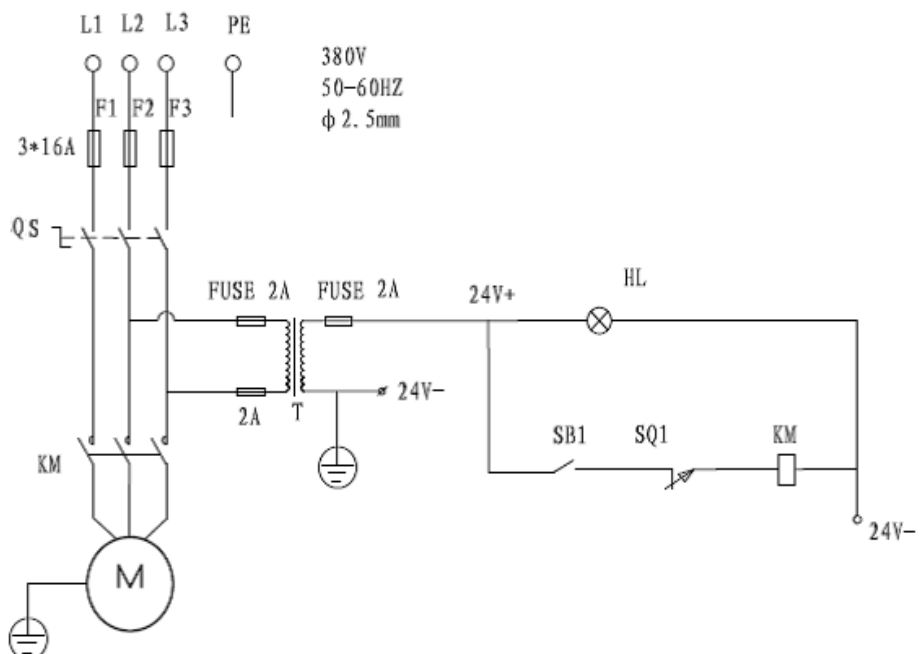
Table 3

Appendix I

Four-post carport lift electrical diagram



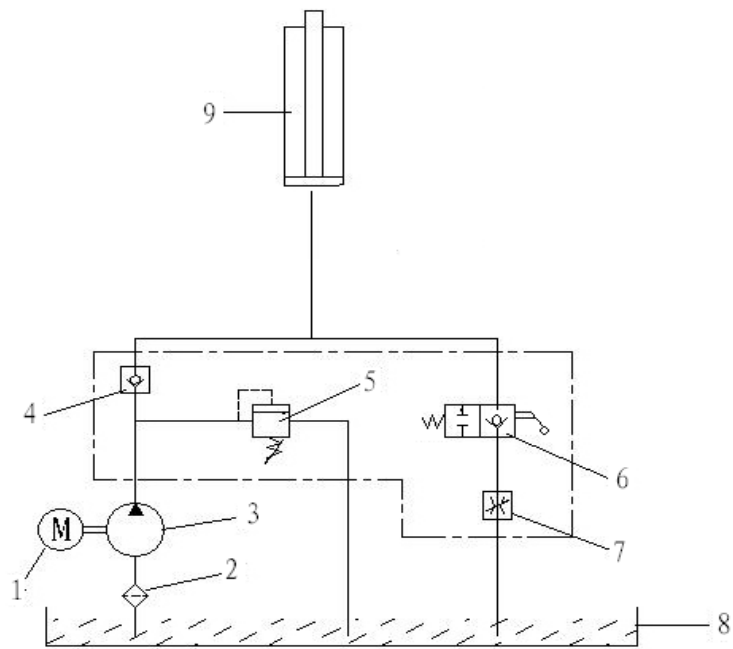
Electrical diagram of standard configuration four-post carport lift



Four-post carport lift with electric control cabinet electrical diagram (Customer optional)

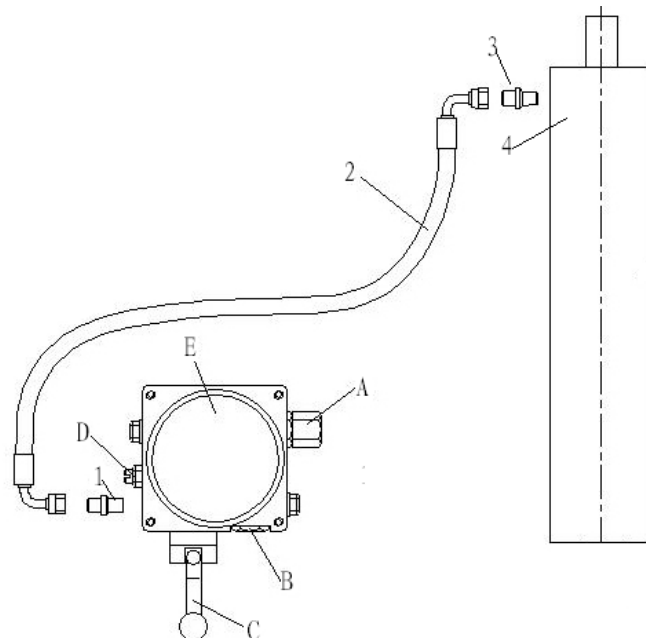
Four-post carport lift hydraulic pressure diagram

Appendix II



Appendix III

Four-post carport lift oil circuit connection diagram



**To ultimate users:**

The guarantee card is important certificate for ultimate users in guarantee service. No card supplied for loss, please conserve it well.

## **[Instructions for Guarantee]**

**I. Guarantee period:**

The guarantee period lasts for 12months from the second day after machine purchase and invoice issuing.

**II. Guarantee scope:**

If quality problem occurs in lifter manufactured by our company in normal installation, operation and maintenance based upon the manual, our company will provide free maintenance for the user according to regulations.

**III. Guarantee method:**

If the quality problem occurs in the lifter, the user can get contact with special dealer of our company for guarantee based upon invoice and guarantee, or direct contact after-sales service of our company. The company will provide free maintenance or replacement for damaged parts in guarantee scope.

**IV. Any situation below never belongs to guarantee scope (that is charging service)**

1. Beyond guarantee period.
2. The faults caused by the user's arbitrary dismounting and change or the operation and maintenance not as per the manual.
3. Rising and falling steel wire rope, rubber tray and slide pad for the lifter.
4. The guarantee period of electronic components is beyond six months.

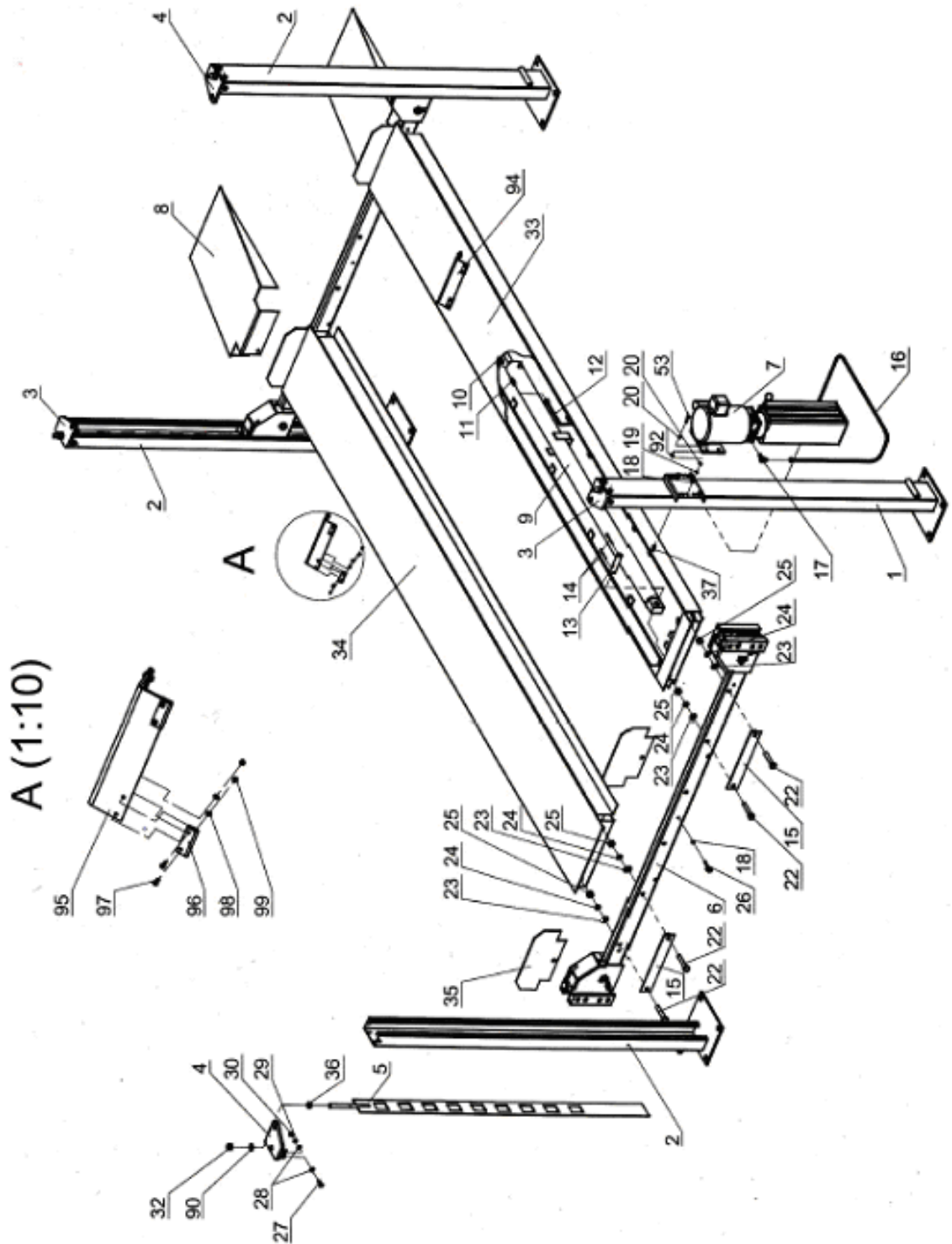
**V. All explanation rights in manual above are reserved by sales department of the company.**

**Return Receipt**

Product model		Product No.		Invoice No. or Contract No.	
User's name		Address		Contact person, telephone	
Purchase date		Operation organization		Telephone	
Faults and maintenance service situation				Maintained by	Date
<p>Note: The user shall clearly fill out return receipt of guarantee card, the guarantee procedure is handled within one month since the purchase date and the return receipt shall be mailed to our company; the guarantee card is never supplied for loss and it is invalid for arbitrary change.</p>					

**Explosive view and list**

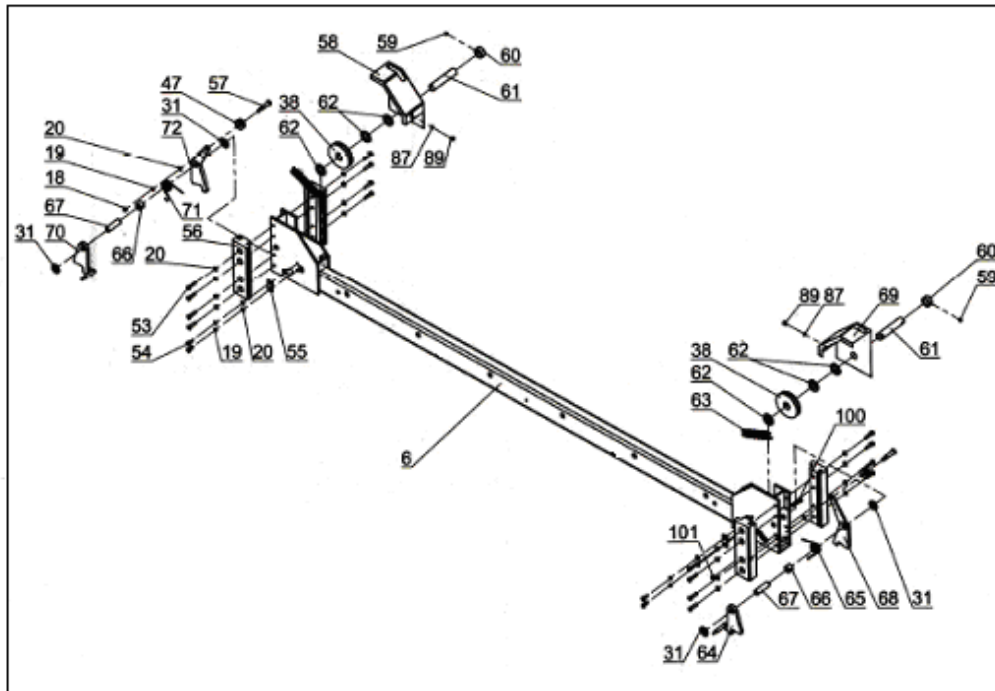
**Appendix 4**



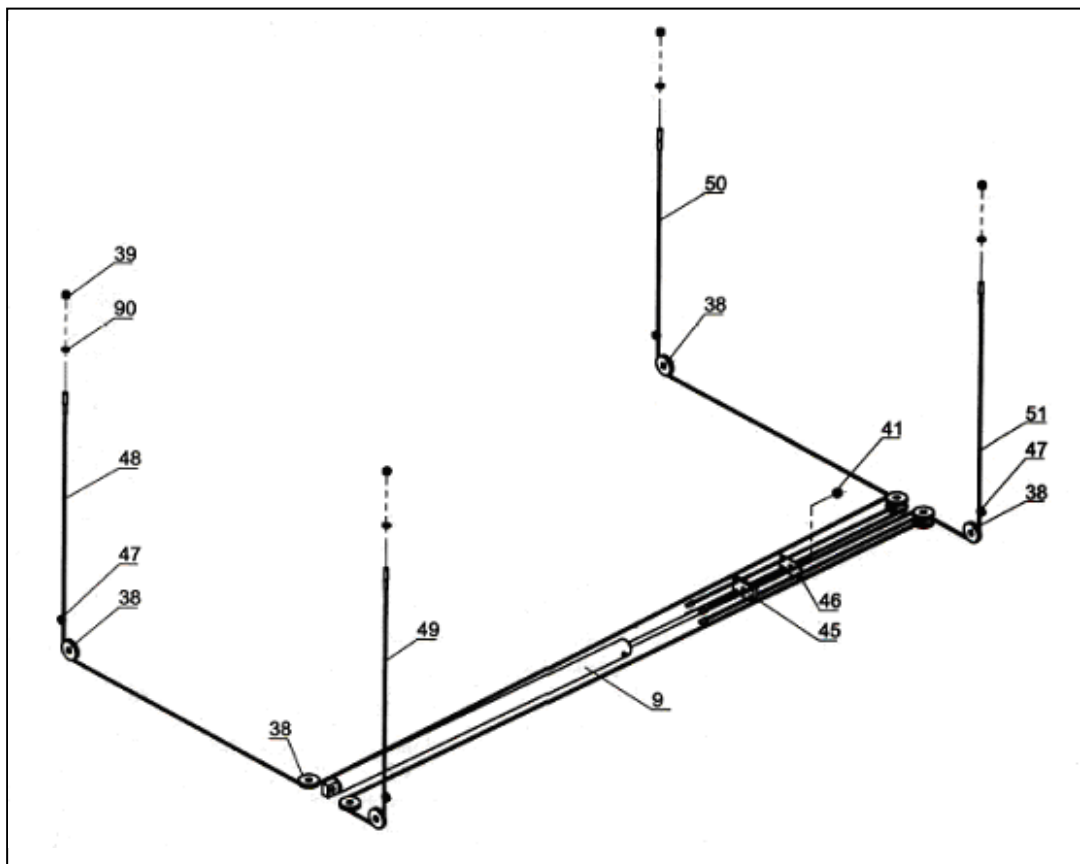
**Main components and parts diagram**

**Cross girder components diagram**

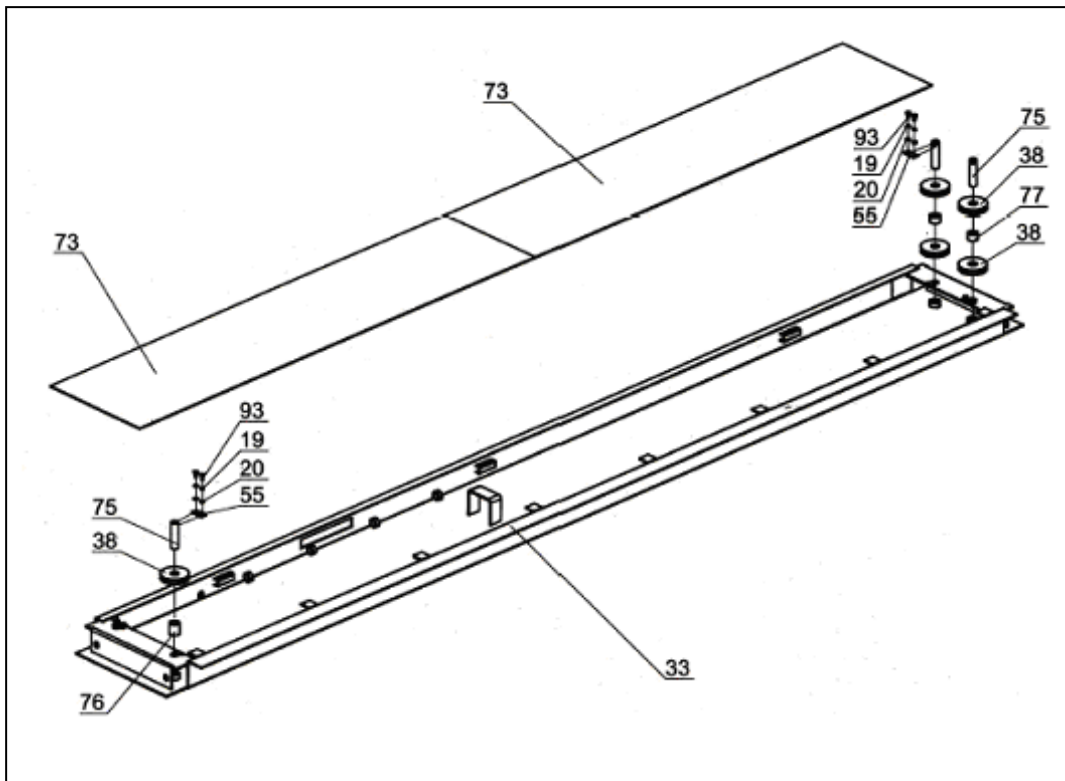




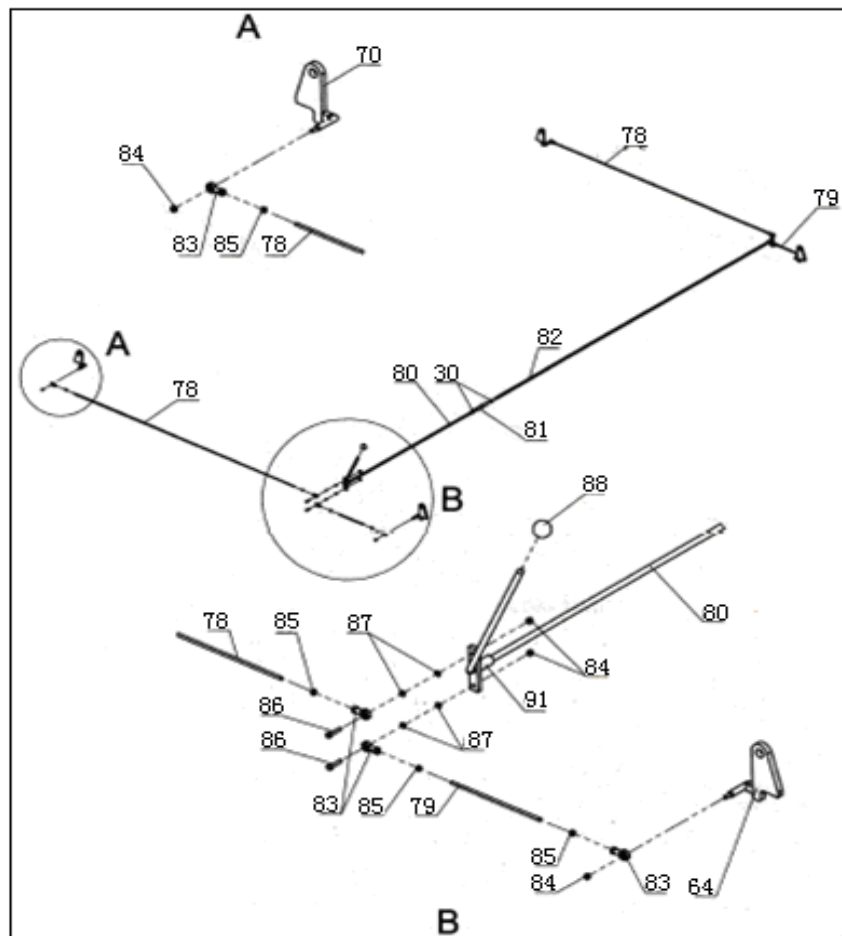
Wire rope components diagram



Summer girder components diagram



Safety mechanism components diagram



Hydraulic oil circuit components diagram

